

LOCAL NAMES

Arabic (abu surung,abu suruj); English (iron wood); Hausa (kiriya); Wolof (jaxan-jaxan,ir)

BOTANIC DESCRIPTION

Prosopis africana reaches 4-20 m in height; has an open crown and slightly rounded buttresses; bark is very dark, scaly, slash orange to red-brown with white streaks.

Foliage drooping; leaves alternate, bipinnate; rachis 10-15 cm long with 3-6 pairs of opposite pinnae (5-8 cm long); 9-16 pairs of leaflets, oblong-lanceolate, 12-30 mm, pubescent; a typical gland between pairs of pinnae and leaflets.

Flowers greenish-white to yellow, fragrant, in dense 6-10 cm long axillary spikes; calyx pubescent but petals glabrous; 10 free-standing stamens; anthers with a small apical gland.

Pods dark brown, cylindrical, thick and hard, shiny, up to 15 x 3 cm, with woody walls, compartmented; about 10 loose, rattling seeds per pod with a thin, intermarginal line around.

BIOLOGY

In its natural habitat, flowering occurs just prior to the rainy season. Seeds mature between February and March.



P. africana tree in Burkina Faso (John Weber)



Prosopis africana bark (Joris de Wolf, Patrick Van Damme, Diego Van Meersschaut)



Prosopis africana foliage (Joris de Wolf, Patrick Van Damme, Diego Van Meersschaut)

ECOLOGY

P. africana is the only tropical African *Prosopis* species, occurring from Senegal to Ethiopia in the zone between the Sahel and savannah forests. Due to extensive overexploitation, it has disappeared from extensive parts of the southern Sahel and the adjacent Sudan savannahs.

BIOPHYSICAL LIMITS

Altitude: Up to 1 000 m, Mean annual temperature: 0-40 deg C, Mean annual rainfall: Up to 500 mm

Soil type: Frequently on fallow land, on sandy clayey soils over laterite. It fairly tolerates most soil types.

DOCUMENTED SPECIES DISTRIBUTION

Native: Benin, Cameroon, Central African Republic, Chad, Cote d'Ivoire, Egypt, Ethiopia, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Nigeria, Senegal, Sierra Leone, Sudan, Tanzania, Togo, Uganda

Exotic:



The map above shows countries where the species has been planted. It does neither suggest that the species can be planted in every ecological zone within that country, nor that the species can not be planted in other countries than those depicted. Since some tree species are invasive, you need to follow biosafety procedures that apply to your planting site.

PRODUCTS

Food: In many areas, the fermented seeds are used as a food condiment.

Fodder: Young leaves and shoots are a fodder that is highly sought after towards the end of the dry season. Consequently, branches are frequently broken off or lopped. Cattle eat the pods.

Fuel: The wood has a high calorific value of about 1720 joules/kg and produces excellent charcoal and firewood.

Timber: The wood is hard, medium heavy to heavy, with fine grain. Sapwood is narrow, light yellow to light brown, clearly distinguished from the dark red-brown heartwood. The latter assumes a dark wine-red colour after drying. Pleasant fragrance when freshly cut. The wood is difficult to saw and plane and blunts the cutting tools. It cannot be nailed without predrilling; however, it is durable and easy to carve, turn and glue. It has many uses over the entire area of its distribution, depending to the dimensions in which it is available. In Senegal it is preferred for art and craft work, while in Ghana it is used for pestles, mortars, mallets, cudgels, furniture, joinery, sleepers in the construction of railway lines, boat building and axe handles.

Gum or resin: *P. africana* yields a gum.

Tannin or dyestuff: The bark and roots contain 14-16% tannin and a colouring matter that gives a reddish tint to leather.

Poison: Pounded dry fruits are suitable as a fish poison.

Medicine: Almost all parts of the tree are used in medicine, the leaves in particular for the treatment of headache and toothache as well as various other head ailments. Leaves and bark are combined to treat rheumatism. Remedies for skin diseases, caries, fevers and eyewashes are obtained from the bark. The roots are a diuretic and are used to treat gonorrhoea, tooth and stomach-ache, dysentery and bronchitis.

In Mali the leaves, bark, twigs and roots are used to treat and relieve bronchitis, dermatitis, tooth decay, dysentery, malaria and stomach cramps. In Ghana, boiled roots serve as a poultice for sore throat, root decoction for toothache, and bark as a dressing or lotion for wounds or cuts.

Other products: In Ghana the pod ashes of *P. africana* are a source of potash for soap making.

SERVICES

Erosion control: Soil conservation is enhanced by planting *P. africana*.

Shade or shelter: Suitable for shade in homesteads in dry areas.

Nitrogen fixing: Has the potential to improve soil fertility as it can fix atmospheric nitrogen.

Soil improver: Provides a useful mulch for the soil.

Ornamental: Suitable as an avenue tree.

Intercropping: *P. africana* has great potential for parkland agroforestry systems and for improved agroforestry technologies in the Sahel, where it grows well in valleys and rocky soils.

TREE MANAGEMENT

Like several other arid-zone species, *P. africana* produces a deep taproot with few lateral shoots; therefore, pruning seedlings in the pots is necessary. Can be grown as a plantation tree but should be pruned while young to get a clean bole. It resprouts vigorously after coppicing.

GERMPLASM MANAGEMENT

Seed storage behaviour is orthodox. There are 7 500-8 000 seeds/kg.

FURTHER READNG

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Weber JC, Larwanou M, Abasse TA, Kalinganire A. 2008. Growth and survival of *Prosopis africana* provenances tested in Niger and related to rainfall gradients in the West African Sahel: Forest Ecology and Management. 256(4):585-592.

SUGGESTED CITATION

Orwa C, A Mutua, Kindt R , Jamnadass R, S Anthony. 2009 Agroforestry Database:a tree reference and selection guide version 4.0 (<http://www.worldagroforestry.org/sites/treedbs/treedatabases.asp>)